

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



U. S. Department of Energy

National Energy Technology Laboratory

**Environmental and Unconventional Oil – Technology Solutions
for Oil and Gas Resource Development**

Funding Opportunity Number: DE-PS26-08NT00209-00

Announcement Type: Initial

CFDA Number: 81.089 Fossil Energy Research and Development

Issue Date: March 3, 2008

Letter of Intent Due Date: Not Applicable

Pre-Application Due Date: Not Applicable

Application Due Date: May 2, 2008 at 8:00:00 PM Eastern Time

NOTE: NEW REQUIREMENTS FOR GRANTS.GOV

Where to Submit

Applications must be submitted through Grants.gov to be considered for award. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your CCR registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

Registration Requirements

There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted>. Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

IMPORTANT NOTICE TO POTENTIAL APPLICANTS: When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

Microsoft Vista and Office 2007 Compatibility

Grants.gov is currently incompatible with both the new Microsoft (MS) Vista Operating System and the new Microsoft (MS) Office 2007 versions of Word, Excel, and Power Point. In order to create and submit your application to Grants.gov, you must find a computer with a previous version Microsoft Operating System, such as Windows XP.

If you attach a file created using MS Office 2007, you will not get an error message when you submit the application, HOWEVER, your entire application will not be able to be processed or accepted at Grants.gov and will not reach DOE. Grants.gov can accept applications with attachments created in MS Office 2007 if the attachments are saved in the prior format. See the http://www.grants.gov/assets/Vista_and_office_07_Compatibility.pdf for detailed instructions on how to do this. A file created in MS Office 2007 can be identified by the "x" at the end of the file extension, for example "sample.docx" for a Word file. Contact Grants.gov at 1-800-518-4726 with any questions.

Questions

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VII of this Announcement explains how to submit other questions to the U.S. Department of Energy (DOE).

Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. When the AOR receives e-mail Number 5, it is their responsibility to follow the instructions in the e-

mail to logon to IIPS and verify that their application was received by DOE. The titles of the five e-mails are:

- Number 1 – Grants.gov Submission Receipt Number
- Number 2 – Grants.gov Submission Validation Receipt for Application Number
- Number 3 – Grants.gov Grantor Agency Retrieval Receipt for Application Number
- Number 4 – Grants.gov Agency Tracking Number Assignment for Application Number
- Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:

- Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

A. SUMMARY

The intent of this Department of Energy (DOE), National Energy Technology Laboratory (NETL) Funding Opportunity Announcement (FOA) is to select and award projects in FY08 that will support program goals to: (1) develop technologies for reducing the cost of environmental compliance while improving environmental protection and provide sound science for policy makers that will maximize recovery of domestic oil and gas resources; and (2) maximize recovery from domestic (unconventional) oil resources.

The key objective of this FOA is to initiate R&D to address a broad spectrum of environmental, and exploration and production (E&P) issues associated with unconventional oil and gas resource development, including those associated with the Bakken Shale of North Dakota and Montana, the Arctic North Slope and other frontier resource areas.

The program is seeking to add multiple (4-7) environmental R&D projects to its portfolio to address the constraints of developing domestic natural gas and oil resources, the most critical priorities identified in the 2007 Oil Shale Environmental Workshop, and environmental issues that impact access to Alaska's energy resources. In addition, multiple projects (3-6) are being sought to develop advanced technologies for primary or enhanced oil recovery with a primary focus on unconventional oil resources including the Bakken shale resource of the Williston Basin and heavy viscous oil of Alaska's North Slope.

B. BACKGROUND INFORMATION

The goal of the U.S. Department of Energy, Office of Fossil Energy's Natural Gas and Oil Technologies Program is to provide the information and technologies that will assure sustainable, reliable, affordable, and environmentally sound supplies of domestic natural gas and oil resources. The Strategic Center for Natural Gas and Oil seeks to accomplish this critical goal by advancing environmentally responsible technological solutions that bolster domestic oil and natural gas recovery. The "Environmental and Unconventional Oil – Technology Solutions to Oil and Gas Resource Development" Funding Opportunity Announcement 2008 supports this goal by seeking new ideas and development of new technologies through which industry can mitigate environmental impacts and bring additional oil and gas resources into the marketplace.

The U.S. is a mature oil-producing province with about 2/3 of the oil resource still remaining after conventional primary and water flood production. Oil will continue to be a large source of domestic energy and is expected to supply more than a third of U.S. energy needs through 2020¹. Half of the U.S. oil (a 400 billion barrel resource) remains unrecoverable with today's technology. Much higher recovery efficiency is possible with improved technology. As a result of DOE-supported research and innovations, and through initiatives of the oil industry, the U.S. leads the world in enhanced oil recovery (EOR) technology. More than 12% of U.S. daily oil production is from application of EOR, and that fraction is steadily growing.

The U.S. is also endowed with a very large unconventional oil resource. Alaska's North Slope contains over 20 billion barrels of heavy/viscous oil, one of the largest unexploited heavy oil resources in the United States^{2,3,4}. Using new advanced technologies, industry has just begun to tap a portion of this relatively shallow oil resource in the Schrader Bluff and West Sak formations on the North Slope, but much more research is needed since most conventional heavy oil recovery techniques are not practical due to the proximity of this shallow oil to the permafrost layer.

The Bakken shale resource of the Williston Basin is estimated to contain as much as 200 billion barrels of oil^{5,6}. Although industry is actively drilling this unconventional oil play, recovery is low due to the complex nature of the reservoir. Advanced technologies to improve oil recovery during primary production as well as methods to recover additional oil through the application of enhanced recovery techniques will be vital to tapping this important resource.

Between 2005 and 2006, the number of natural gas and natural gas condensate wells in the U.S. has increased by 23,000 wells. In addition, there were about 50,000 wells drilled during 2007⁷. Environmental issues associated with this increase in the number of wells for natural gas (and oil) supply can be categorized as water use and quality impacts, air quality impacts, surface and ecosystem impacts, and socioeconomic impacts. The focus of this initiative is to provide an unbiased scientific perspective in the collection and analysis of data to help understand and mitigate environmental impacts. The Nation also needs to increase oil and natural gas supplies from Alaska to help provide energy for the rest of the Nation. The extreme environmental sensitivity of the tundra and permafrost covered areas, the sensitivity of Alaska's fisheries to any threat of damage to the ecosystems, and the importance of subsistence hunting and fishing to Alaskans make it imperative that development of fossil energy resources, whether for delivery to the lower-48 states or for local use, be environmentally responsible.

C. FUNDING OPPORTUNITY OBJECTIVES

The objective of this FOA is to fund R&D that addresses key environmental and technical E&P issues associated with the production of domestic oil and natural gas. The Department of Energy primary goal will be to fund projects related to: (1) Environmental R&D associated with oil and natural gas development including produced water issues, water management associated with oil shale resource development, and environmental issues specifically related to Alaska oil and gas resource development; and (2) Unconventional oil R&D, especially as it relates to the Bakken shale and like resources, and Alaska's North Slope heavy/viscous oil resource.

Reliable domestic energy supplies are vital to the Nation's economy. This FOA is designed to identify and fund research and demonstration projects that enhance the environmental performance of domestic oil exploration and production, and to improve the efficiency of unconventional oil production, thus making available additional oil from sources that are currently beyond the capabilities of current technology.

Projects selected under this FOA are to be conducted in partnership with industry, universities, National Laboratories, State and local government, and other organizations. Cost-share is required to facilitate the transfer of technology to the private sector while leveraging Federal investment in the projects.

SCOPE

This Funding Opportunity Announcement (FOA) has two topic areas with associated subtopics. Applicants are cautioned that this is a master FOA and that each Technical Topic Area has its own program-specific FOA number for submission of applications as follows:

Topic Area 1 – Environmental R&D (DE-PS26-08NT00209-01)

- Area 1.1 – Produced Water and Other Natural Gas and Oil Environmental Issues
- Area 1.2 – Water Management Solutions to Enable Oil Shale Resource Development
- Area 1.3 – Alaska Environmental Issues

Topic Area 2 – Unconventional Oil R&D (DE-PS26-08NT00209-02)

- Area 2.1 – Unconventional Resources
- Area 2.2 – Alaska North Slope Heavy Oil

Applications will not be considered if they are submitted under the master FOA. Applications should be submitted under the Technical Topic Area which best fits the majority of the effort to be performed. Do not submit an identical application under more than one Technical Topic Area.

There is no limitation on the number of different applications an Applicant may submit. However, a separate application must be submitted for each Technical Topic Area for which the Applicant is interested in receiving an award. Each application must be complete and shall not rely upon another application for submission of the required documents.

Technical Topic Areas

Topic Area 1 – Environmental R&D (DE-PS26-08NT00209-01)

The scope of work related to this area should address the constraints to development of domestic natural gas and oil resources, the most significant priorities identified in the 2007 Oil Shale Environmental Workshop⁸, and the environmental issues that impact access to Alaska's energy resources as well as their production. Applications are sought to:

Area 1.1 – Produced Water and Other Natural Gas and Oil Environmental Issues

- Develop new, lower-cost produced water treatment and/or handling technologies, such as down-hole separation.
- Develop technologies or scientific data to allow the economic beneficial use of produced water.
- Conduct scientific studies to address specific ecological, environmental, or regulatory concerns that limit producers' options for managing produced water, including surface discharge (e.g., scientific studies to support new water discharge standards).

Area 1.2 – Water Management Solutions to Enable Oil Shale Resource Development

- Develop an integrated basin/regional baseline for surface and groundwater data (quality and quantity) and GIS-based analytical tools for analyzing and manipulating with the data.
- Analyze generated constituents and water consumption from process-specific technologies for evaluation of Best Available Control Technology.

Area 1.3 – Alaska Environmental Solutions

- Develop technology or practices that may lead to reduced environmental disturbance associated with exploration or production, especially as activities move increasingly toward "frontier" basins and other under-explored areas.
- Research that may lead to earlier tundra access in the winter or later tundra access in the spring while maintaining or enhancing current levels of environmental protection.
- Research leading to more efficient use or allocation of water resources for ice road and ice pad construction, possible EOR applications, or other uses.
- Develop alternatives to ice roads and ice pads, especially for application in hilly or rolling terrain, or in areas where water resources are relatively scarce.
- Develop technologies for environmentally responsible development of local oil or gas resources near Alaska's remote villages leading to the reduced need to ship and store diesel fuel for local power generation. Research topics should include small-scale drilling and completion capability, evaluation of conventional and unconventional natural gas for use in remote areas, and development of technology and strategies for use of produced water in arctic climates.
- Identify and evaluate the quantity, quality, and location of natural seeps, and determine potential capture mechanisms for use as an energy source.

Topic Area 2 - Unconventional Oil R&D (DE-PS26-08NT00209-02)

The scope of work related to this area should address aspects of Unconventional and Enhanced Oil Recovery. Applications are sought for R&D projects in the following areas:

Area 2.1 – Unconventional Resources

NOTE: Research proposed in this area may be supported by modeling and numerical simulation but stand-alone applications based solely on modeling and/or numerical simulation will not be considered. While not required nor part of the evaluation criteria, NETL prefers applications leading to field tests of technology.

- Advanced technologies to improve oil recovery during primary production from large, unconventional oil resources with emphasis on the Bakken of North Dakota and Montana and other like resources with similar E&P challenges.
- Reservoir/Basin Characterization, Laboratory Studies and Reservoir Modeling in support of enhanced recovery techniques for unconventional oil including gas re-pressurization, waterflooding and improved recovery (e.g., CO₂ EOR) to recover oil remaining after primary production.
- Conduct scientific investigations to demonstrate the potential of “next generation” EOR technologies/processes to increase effectiveness of flood design and/or recovery efficiency. The investigations should be conducted through cooperative teaming with independents to support either an existing or planned pilot/field demonstration.

Area 2.2 – Alaska North Slope Heavy Oil

- Adopting “Cold Heavy Oil Production with Sand” (CHOPS) for arctic applications and understanding the flow properties of cold, heavy oil with significant sand and other suspended solids. Thermal technologies are also of interest.
- Research leading to viscosity reduction for production or transportation. This may include thermal, chemical or microbial means, or other methods of consequence.
- Research leading to improved understanding of phase behavior, asphaltene precipitation or other effects of CO₂ injection, low-salinity water flood, chemical and microbial injection, or other enhanced oil recovery methods.
- Mobility studies for cold , heavy oils in the reservoir
- Production control technologies for cold, heavy oils in the wellbore and at the surface.

End Notes

1. Energy Information Administration Annual Energy, Annual Energy Outlook 2007(with projections to 2030) Table 1.
2. U.S. Heavy Oil Database Distributed as Part of DOE Software/Database by NETL
3. Stryker, A.R. , R. Watkins, D.K. Olsen, A. K. Sarkar, E. B. Ramzel, W.I. Johnson and J. Butz., “Feasibility Study of Heavy Oil Recovery in the United States” NIPER/BDM-0225, September 1995.
4. Thomas, C.P., D.D. Faulder, T.C. Doughty, D.M. Hite and G.J. White, “Alaska North Slope Oil and Gas , A Promising Future or an Area in Decline” DOE/NETL-2007/1279, August 2007.
5. Nelms, R.L. and R.C. Burke., “Evaluation of Oil Recovery Characteristics to Assess North Dakota Carbon Dioxide Miscible Flood Potential “ 12th Williston Basin Horizontal Well and Petroleum Conference, May 2-4 ,2004, Minot, North Dakota.
6. Leigh C, Price “Origins and Characteristics of Basin-Centered Continuous Reservoir Unconventional Oil-Resource Base of the Bakken Source System, Williston Basin”. www.undeerc.org/price
7. Energy Information Administration Electronic Database “Crude Oil and Natural Gas Exploratory and Development Wells” Updated February 4, 2008.
8. U.S. Department of Energy, National Energy Technology Laboratory “2007 Oil Shale Environmental Issues and Needs Workshop, October 18, 2007, Colorado School of Mines, Golden, Colorado”, March 2008.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding cooperative agreements under this program Announcement.

B. ESTIMATED FUNDING

- The estimated total award funding for new awards under this Announcement is expected to be up to \$13,500,000.
- The estimated total award value includes an average of 20% cost share.*

**NOTE: Cost share contributions will be 80% DOE share and 20% applicant cost share with the exception of 50%/50% cost share for field demonstrations.*

C. MAXIMUM AND MINIMUM AWARD SIZE

- Ceiling (i.e., the maximum amount for an individual award made under this Announcement): None.
- Floor (i.e., the minimum amount for an individual award made under this Announcement): None.

D. EXPECTED NUMBER OF AWARDS

Under this Announcement, DOE expects to make the following number of awards for each Technical Topic Area:

<u>Technical Topic Areas:</u>	<u>Number of Awards</u>
1. Environmental R&D	4-7
2. Unconventional Oil R&D	3-6

However, the Government reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this Announcement and will award that number of financial assistance instruments which serves the public purpose and is in the best interest of the Government

E. ANTICIPATED AWARD SIZE

The anticipated DOE award size for projects under each Technical Topic Area in this Announcement is:

<u>Technical Topic Areas</u>	<u>Award Size Per Individual Project</u>
Topic Area 1*	\$500,000 - \$1,500,000
Topic Area 2*	\$500,000 - \$1,500,000

**NOTE: Cost share contributions will be 80% DOE share and 20% applicant cost share with the exception of 50%/50% cost share for field demonstrations.*

F. PERIOD OF PERFORMANCE

The anticipated period of performance for projects under each Technical Topic Area in this Announcement is:

<u>Technical Topic Area</u>	<u>Period of Performance</u>
Topic Area 1	12 - 36 months
Topic Area 2	12 - 36 months

Projects are to include opportunities for go/no-go decisions at key project milestones.

G. TYPE OF APPLICATION

DOE will accept new and renewal applications under this Announcement. However, the Government reserves the right to determine whether the application will be funded as a new or renewal award. Renewal applications are requests for additional funding for a period subsequent to that provided by a current award. Renewal applications compete with all other applications and must be submitted by any established due date/deadline or at least six months before additional funding is required if there is no specified due date/deadline. In preparing a renewal application, applicants should assume that reviewers will not have access to previous applications. The application should be developed as fully as though the applicant were applying for the first time. The application must include all the information required for a new project, plus the project narrative section should discuss the results from prior work.

PART III - ELIGIBILITY INFORMATION

ELIGIBLE APPLICANTS

All types of entities are eligible to apply, except other Federal agencies, Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

A. COST SHARING

The cost share must be at least 20% of the total allowable costs for research and development projects and 50% of the total allowable costs for demonstration and commercial application projects and must come from non-Federal sources unless otherwise allowed by law. The sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project.

B. OTHER ELIGIBILITY REQUIREMENTS

Federally Funded Research and Development Center (FFRDC) Contractors.

FFRDC contractors are not eligible for an award under this Announcement, but they may be proposed as a team member on another entity's application subject to the following guidelines:

Authorization for non-DOE FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award and must not place the FFRDC contractor in direct competition with the private sector.

Authorization for DOE FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE FFRDC contractor on the proposed project and this authorization must be submitted with the application. The following wording is acceptable for this authorization.

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory, will not adversely impact execution of the DOE assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector."

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a DOE FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Cost Share. The applicant's cost share requirement will be based on the total cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

FFRDC Contractor Effort:

- The FFRDC contractor effort, in aggregate, shall not exceed 25% of the total estimated cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the FFRDC contractor.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants,” and then select “Download Application Package.” Enter the CFDA and/or the funding opportunity number located on the cover of this Announcement and then follow the prompts to download the application package.

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent.

Letters of Intent are not required.

2. Pre-application

Pre-applications are not required.

C. CONTENT AND FORM OF APPLICATION – 424 RESEARCH & RELATED (R&R)

You must complete the mandatory forms and any applicable optional forms (e.g., Disclosure of Lobbying Activities (SF-LLL)) in accordance with the instructions on the forms and the additional instructions below. Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this Announcement.

- 1. SF 424 (R&R)** Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm under Certification and Assurances.
- 2. RESEARCH AND RELATED (R&R) Other Project Information**
Complete questions 1 through 5 and attach files. The files must comply with the following instructions:

Project Summary/Abstract (Field 6 on the Form)

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed one page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font not smaller than 11 point. To attach a Project Summary/Abstract, click “Add Attachment.”

Project Narrative (Field 7 on the Form)

The project narrative must not exceed **THIRTY (30)** pages, including the technical discussion and statement of project objectives when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right) **double spaced**. **EVALUATORS WILL ONLY REVIEW THE**

NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed. See Part VIII.D for instructions on how to mark proprietary application information. To attach a Project Narrative, click “Add Attachment.”

The project narrative must include:

Project Narrative Content and Layout (Preparation Instructions)

The project narrative will consist of the Applicant’s information addressing the technical, scientific, and management aspects of the assistance action, the Applicant’s capabilities and what the Applicant will do to satisfy the requirements of the Funding Opportunity Announcement objectives. Since the information contained in this section will be evaluated to determine such matters as understanding of the work to be performed, technical approach, and potential for completing the desired work, it should be specific and complete in every detail. The application should be practical and prepared simply and economically, providing a straightforward, concise delineation of what it is the Applicant will do to satisfy the requirements of the Funding Opportunity Announcement objectives.

The application shall not merely offer to perform work in accordance with the Funding Opportunity Objectives but shall describe the actual work being proposed.

To help facilitate the review process and to insure addressing all the Merit Review Criteria, the Applicant shall use the following format (including the detailed Table of Contents below) when preparing the Project Narrative:

Cover Page [Excluded from the Project Narrative page limitation of thirty (30) pages] The **cover page** shall indicate the funding opportunity notice number, name and address of the Applicant, point of contact, telephone/FAX number/E-Mail address, title of proposed project, and date of application.

Table of Contents [Excluded from the Project Narrative page limitation of thirty (30) pages]

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APPENDICES [not included in thirty (30) page limit]

A. ADDITIONAL PERTINENT PUBLICATIONS (if any)	A1
B. Draft Project Management Plan (see instructions under 'other attachments')	A2

PROJECT NARRATIVE DESCRIPTION OF SPECIFIC CONTENT

This section shall contain the major portion of the Technical Application prepared in the format of the preceding Table of Contents. It shall be presented in as much detail as practical and include the following technical information:

1. Scientific and Technical Merit

In this section the Applicant shall provide detailed information in the format of the preceding table of contents that will allow DOE reviewers to score the application based on Criterion 1 identified in Section V, Paragraph A.2.

1.1 Statement of the Problem - The Applicant should discuss the nature and significance of the problem being addressed in the application.

1.2 Current State-of-the-Art - The Applicant should discuss the technology and/or information gaps that currently exist in addressing that problem. This discussion will include a review of the limitations (technical, costs, others) of existing information/technology as they relate to the problem being addressed.

1.3 Proposed Solution - The Applicant should provide a thorough technical discussion on the work being proposed and the likelihood of overcoming the limitations.

1.4 Successful Technology - The Applicant should provide a thorough discussion on why the proposed technology has a potential likelihood of being successful.

1.5 Relevance to the Announcement Objectives - The Applicant should discuss how the proposed work fits within DOE's research goals and objectives for the Announcement topic being addressed.

1.6 Expected Impacts and Benefits - The Applicant should discuss and quantify to the extent appropriate, the potential impact of the proposed technology/methodology (e.g., increases the state-of-knowledge, increases the economics of potential productivity, to help resolve environmental barriers and develop technologies for unconventional resource development etc.).

2. Technical Approach

In this section the Applicant shall provide detailed information as outlined in the preceding Table of Contents that will allow DOE reviewers to score the application based on Criterion 2 identified in Section V, Paragraph A.2.

2.1 Detailed Statement of Project Objectives - The Applicant shall provide a thorough and detailed narrative description of the planned work for each proposed phase. The purpose of the Statement of Project Objectives (SOPO) is to provide a concise task/subtask description of specific planned work activities. It should **not** repeat background or explanatory information addressed under the Scientific and Technical Merit section. The SOPO should follow the prescribed format provided below (e.g., Objectives, Scope of Work, Tasks to be Performed). It should be written in the active voice using consistent wording that divides the work into logical tasks and subtasks necessary to accomplish the project objectives. The Applicant shall provide a clear description of the work to be performed under each task and subtask. The description shall identify the product(s) and deliverables that will result from each task and its relation to the overall project. The description of the planned work shall contain necessary and sufficient information to estimate the cost of the work being proposed.

Statement of Project Objectives (SOPO) Format

The Department of Energy's, National Energy Technology Laboratory uses a specific format for Statement of Project Objectives in its awards. In announcements such as this one, where the Government does not provide a Statement of Project Objectives, the Applicant is to provide one, which the DOE will then use to generate the Statement of Project Objectives to be included in the award.

The Statement of Project Objectives may be released to the public by DOE in whole or in part at any time. It is therefore required that it shall not contain proprietary or confidential business information.

The Statement of Project Objectives is generally less than 10 pages in total for the proposed work and **is included in the 30 page Project Narrative page limitation**. Applicants shall prepare the Statement of Project Objectives in the following format:

TITLE OF WORK TO BE PERFORMED

(Insert the title of work to be performed. Be concise and descriptive.)

A. OBJECTIVES

Include one paragraph on the overall objective(s) of the work. Also, include objective(s) for each phase of the work.

B. SCOPE OF WORK

This section should not exceed one-half page and should summarize the effort and approach to achieve the objective(s) of the work for each Phase.

C. TASKS TO BE PERFORMED

Note that the DOE has identified two specific tasks that the Applicant is required to insert into the Statement of Project Objectives as Tasks 1 and 2.

Tasks, concisely written, should be provided in a logical sequence and should be divided into the phases of the project. This section provides a brief summary of the planned approach to this project.

PHASE I /Budget Period 1

Task 1.0 – Project Management Plan (PMP)

The Recipient shall work together with the DOE Project Officer to modify and update the PMP submitted as part of the original application package, as necessary. The revised PMP shall be submitted within 30 days of the award. The DOE Project Officer shall have 20 calendar days from receipt of the Project Management Plan to review and provide comments to the Recipient. Within 15 calendar days after receipt of the DOE's comments, the Recipient shall submit a final Project Management Plan to the DOE Project Officer for review and approval.

Task 2.0--Technology Status Assessment

The Recipient shall perform a Technology Status Assessment and submit a summary report describing the current state of information and/or technology relevant to the proposed work. The report should include both positive and negative aspects of each existing approach or technology. The report shall not exceed five (5) typewritten pages in length. The report is not to contain any proprietary or confidential data, as the report will be posted on the NETL website for public viewing. The report is to be submitted within 60 days of the award. The DOE Project Officer shall have 20 calendar days from receipt of report to review and provide comments to the recipient. Within 15 calendar days after receipt of the DOE's comments, the recipient shall submit a final Report to the DOE Project Officer for review and approval.

The report shall contain the following:

1) Current state of information or technology (Note: Industry wide, not strictly the Applicant's technology)

- Summary of Background of Industry/Sector
- Technologies/Tools/Approaches/Data Being Used
- Benefits and Inadequacies of Current State-of-the-Art.

2) Development Strategies

- Why New Approach is Required?
- Problems to Address in this Research Project

3) Future

- What Barriers will the Research Overcome and the Potential Impact on the exploration or ultimate production of hydrates, or the understanding of hydrate's role in the natural environment.
- Deliverables – Tools, Methods, Instrumentation, Products, etc.

4) References (relevant and used in the assessment report)

Task 3.0 (Title & Description)

Subtask 3.1 (Title & Description; optional)

Subsequent Subtasks (Subtask Number, Title & Description; optional)

Subsequent Tasks (Task Number, Title & Description; optional)

Subtasks (Subtask Number Title & Description; optional)

PHASE II / Budget Period 2 (Optional)

Tasks (Task/Subtask Number, Title & Description)

D. DELIVERABLES

The periodic, topical, and final reports shall be submitted in accordance with the "Federal Assistance Reporting Checklist" and the instructions accompanying the checklist.

The Recipient shall provide a list of deliverables other than those identified on the "Federal Assistance Reporting Checklist" that will be delivered. These reports shall also be identified within the text of the Statement of Project Objectives. See the following examples:

1. Task 1.0 - Project Management Plan
2. Task 2.0 - Technology Status Assessment

E. BRIEFINGS/TECHNICAL PRESENTATIONS (If applicable)

The Recipient shall prepare detailed briefings for presentation to the Project Officer at the Project Officer's facility located in Pittsburgh, PA or Morgantown, WV. Briefings shall be given by the Recipient to explain the plans, progress, and results of the technical effort on an annual basis. DOE may substitute attendance of meetings at NETL with recipient participation in external project/merit reviews.

The Recipient shall provide and present a technical paper(s) at the DOE/NETL Annual Contractor's Review Meeting held at the NETL facility located in Pittsburgh, PA or Morgantown, WV, or at an alternate location mutually agreed upon by the NETL Project officer and the recipient.

2.2 Labor Hours and Categories - The Applicant shall provide a table listing the estimated labor hours and labor categories (e.g., project manager, principal investigator, engineer, technician, scientist, clerical, etc.) required for each task and subtask in the Statement of Project Objectives. The Applicant shall include a table showing labor hours and labor categories for any proposed subcontracting or consulting effort for each task and subtask. These categories should be easily cross-referenced with the key personnel, and should agree with effort levels identified in the separate "Research and Related Budget" form submitted under PART IV, Section C, Subsection 4 of this FOA.

2.3 Proposed Travel - The Applicant shall describe any proposed travel. The purpose of the trip, number of trips, the origin and destination, trip duration, and the number of personnel shall be included in the explanation.

2.4 Technology Transfer Plan - The Applicant shall describe in a technology transfer plan how results of the proposed work will be made available to the DOE, the targeted industry segment, and to the greater scientific community. The technology transfer plan shall specifically identify and describe the manner in which the product or information resultant from the work will be made available to the public in general and where applicable shall detail recipient preferences for intellectual property rights. The preference of DOE is to maximize public availability of information and/or products from the effort (specifically for non-profit / academic organizations). As such, maximization of information / product availability will be considered a positive attribute in evaluation of the technology transfer plan.

3. Technical and Management Capabilities

In this section the Applicant shall provide detailed information as outlined in the preceding table of contents that will allow DOE reviewers to score the application based on Criterion 3 identified in Section V, Paragraph A.2.

3.1 Organizational Capabilities and Experience - The Applicant should provide information relevant to organizational capabilities and experience (both technical and managerial) in managing technical projects of a similar nature and complexity. The Applicant should provide information and examples that demonstrate its ability to successfully develop products (tools, components, software, reports) within scope, budget, and schedule of the project. The Applicant should provide an organizational chart, including subcontractors and consultants, that clearly depicts the project team structure that will be used to manage the project and should discuss the effectiveness of this structure with respect to meeting the objectives, schedule and budget set forth for the project.

3.2 Qualifications of Key Personnel - The credentials, capabilities, experience (technical and managerial) and availability of the key personnel to be assigned to the project shall be provided. The roles of key personnel and the percentage of time being devoted to the project should be clearly identified. Resumes of key project personnel shall be included in the RESEARCH AND RELATED Senior/Key Person file as detailed below.

3.3 Quality and Suitability of Facilities, Equipment, and Materials - Information should be provided on the facilities and equipment needed to perform the proposed research and whether or not this equipment is available or needs to be purchased.

Other Attachments (Field 11 on the form):

If you need to elaborate on your responses to questions 1-5 on the "Other Project Information" document, attach a file in field 11.

Also, attach the following files:

Project Management Plan.

This document is an appendix to the Project Narrative and is not included in the 30 page limitation. Save this plan in a single file named "pmp.pdf" and click on "Add Attachments" in Field 11 to attach.

This plan should be formatted to include the following sections with each section to include the information as described below:

- A. **Executive Summary:** Provide a description of the project that includes the objective, project goals, and expected results. For purposes of the application, this information is included in the Project Narrative (Field 7) and should be simply copied to this document for completeness, so that the Project Management Plan is a stand-alone document.
- B. **Work Breakdown Structure:** Provide a work breakdown structure and supporting narrative for each task and subtask, as identified in the Statement of Project Objectives. The narrative shall concisely describe the approach or methods the Applicant will use to achieve the objectives of each task/subtask.
- C. **Milestone Log:** Provide milestones for each budget period (or phase) of the project, and describe the relationship to specific tasks and subtasks, identified in (B) above. Each

milestone should include a title and planned completion date. Milestones should be quantitative and show progress toward budget period and/or project goals. The Applicant shall identify those milestones that represent critical path milestones (no less than 2 per calendar year), which must be met prior to the project proceeding to subsequent activities.

[Note: During project performance, the Recipient will report the Milestone Status as part of the required quarterly Progress Report as prescribed under Attachment 4, Reporting Requirements Checklist. The Milestone Status will present actual performance in comparison with Milestone Log, and include:

- (1) the **actual** status and progress of the project,
- (2) specific progress made toward achieving the project's milestones, and,
- (3) any proposed changes in the project's schedule required to complete milestones.]

- D. **Project Schedule/Timeline:** Provide a schedule of the project (similar to a Gantt chart) broken down by task and subtask, identified in (B) above. The schedule should include for each task, a start date, and end date. The schedule should show interdependencies between tasks and include the milestones that are identified in the Milestone Log (Section C of the PMP).
- E. **Success Criteria at Decision Points:** Provide success criteria for each decision point in the project, including go/no-go decision points and the conclusions of budget periods and the entire project. The success criteria should be objective and stated in terms of specific, measurable, and repeatable data. Usually, the success criteria pertain to desirable outcomes, results, and observations from the project.
- F. **Risk Management:** Provide a summary description of the proposed approach to identify, analyze, and respond to perceived risks associated with the proposed project. Project risk events are uncertain future events that, if realized, affect the success of the project. As a minimum, include the initial identification of significant technical, resource, and management issues that have the potential to impede project progress and strategies to minimize impacts from those issues.
- G. **Funding and Costing Profile:** Provide a table (the Project Funding Profile) that shows, by budget period, the amount of government funding going to each project team member. Also, provide a table (the Project Costing Profile) that projects by month, the expenditure of government funds for the first budget period, at a minimum.

[Note: As the first task in the Statement of Project Objectives, successful applicants will revise the draft version of the Project Management Plan that is submitted with their applications by including details from the negotiation process. This Project Management Plan will be updated by the Recipient as the project progresses and the Recipient must use this plan to report schedule and budget variances.]

Commitment Letters from Third Parties Contributing to Cost Sharing

If a third party, (i.e., a party other than the organization submitting the application) proposes to provide all or part of the required cost sharing, the applicant must include a letter from the third party stating that it is committed to providing a specific minimum dollar amount of cost sharing. The letter should also identify the proposed cost sharing (e.g., cash, services, and/or property) to be contributed. Letters must be signed by the person authorized to commit the expenditure of funds by the entity and be provided in a PDF format. Save this information in a single file named "CLTP.pdf" and click on "Add Attachments" in Field 11 to attach.

Budget for DOE Federally Funded Research and Development Center (FFRDC) Contractor, if applicable. If a DOE FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work Authorization System. This order and the DOE Field Work Proposal form are available at http://management.energy.gov/business_doe/business_forms.htm. Use the FFRDC name as the file name (up to 10 letters) and attach to the R&R Other Project Information form in Field 11 – Add Attachments.

Environmental Questionnaire

You must complete the environmental questionnaire at (insert website). Save the questionnaire in a single file named “Env.pdf” and click on “Add Attachments” in Field 11 to attach.

SF 424 C Excel, Budget Information – Construction Programs

If you plan to have a subawardee provide construction services on your proposed RD&D project, submit a SF 424 C Excel Budget Information – Construction Programs form (available at http://management.energy.gov/business_doe/business_forms.htm) for the subawardee’s construction effort, instead of a R&R Subaward Budget Attachment. Complete a SF 424 C budget for each year of support requested and a cumulative budget for the total project period. You must also identify the subawardee’s construction costs on your RESEARCH AND RELATED BUDGET form on the Subaward/Consortium/Contractual Costs line (Line F.5). Justify the construction costs in your budget justification file and identify who will be performing the work. Save the SF 424 C budgets in a single file named “SF424C.xls,” and attach to the RESEARCH AND RELATED Other Project Information form. Click on “Add Attachments” in Field 11 to attach.

3. RESEARCH AND RELATED Senior/Key Person

Complete this form before the Budget form to populate data on the Budget form. Beginning with the PD/PI, provide a profile for each senior/key person proposed. A senior/key person is any individual who contributes in a substantive, measurable way to the scientific/technical development or execution of the project, whether or not a salary is proposed for this individual. Subawardees and consultants must be included if they meet this definition. For each senior/key person provide:

Biographical Sketch.

Complete a biographical sketch for each senior/key person and attach to the “Attach Biographical Sketch” field in each profile. The biographical information for each person must not exceed 2 pages single spaced when printed on 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and must include:

Education and Training. Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.

Research and Professional Experience: Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications. Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights, and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

Current and Pending Support

- Current and pending support information is not required for this program. Do not attach a Current and Pending Support file.

4. RESEARCH AND RELATED BUDGET (TOTAL FED + NON-FED)

Complete the Research and Related Budget (Total Fed & Non-Fed) form in accordance with the instructions on the form (Activate Help Mode to see instructions) and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this Announcement (See PART IV. G).

Budget Justification (Field K on the form).

Provide the required supporting information for the following costs (See R&R instructions): equipment; domestic and foreign travel; participant/trainees; material and supplies; publication; consultant services; ADP/computer services; subaward/consortium/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. If cost sharing is required, provide an explanation of the source, nature, amount, and availability of any proposed cost sharing. Attach a single budget justification file for the entire project period in Field K. The file automatically carries over to each budget year.

5. R&R SUBAWARD (Total Fed + Non-Fed) FORM

Budgets for Subawardees, other than DOE FFRDC Contractors. You must provide a separate cumulative R&R budget for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET (Total Fed + Non-Fed) FORM and e-mail it to each subawardee that is required to submit a separate budget. After the Subawardee has e-mailed its completed budget back to you, attach it to one of the blocks provided on the form. Use up to 10 letters of the subawardee's name as the file name.

6. Disclosure of Lobbying Activities (SF-LLL)

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

Name of Document	Format	Attach to
SF 424 (R&R)	Form	N/A
RESEARCH AND RELATED Other Project Information	Form	N/A
Project Summary/Abstract	PDF	Field 6

Project Narrative, including required appendices	PDF	Field 7
Budget for DOE FFRDC, if applicable	PDF	Field 11
Project Management Plan	PDF	Field 11
Commitment Letters from Third Parties	PDF	Field 11
Environmental Questionnaire	PDF	Field 11
SF 424C Excel - Budget Information for Construction Programs File	PDF	Field 11
RESEARCH & RELATED SENIOR/KEY PERSON	Form	N/A
Biographical Sketch	PDF	Attach to appropriate block
RESEARCH AND RELATED BUDGET (Total Fed + Non-Fed)	Form	N/A
Budget Justification	PDF	Field K
R&R SUBAWARD BUDGET (Total Fed + Non-Fed) ATTACHMENT(S) FORM	Form	N/A
SF-LLL Disclosure of Lobbying Activities, if applicable	Form	N/A

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable

E. SUBMISSION DATES AND TIMES

1. Pre-application Due Date

Pre-applications are not required.

2. Application Due Date

Applications shall be received by May 2, 2008, not later than 8:00 PM Eastern Time. You are encouraged to transmit your application well before the deadline. **APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

F. INTERGOVERNMENTAL REVIEW

This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS

Cost Principles: Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. The cost principles for commercial organization are in FAR Part 31.

Pre-award Costs: Recipients may charge to an award resulting from this Announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the Applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@grants.gov.

2. Registration Process

You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **We recommend that you start this process at least three weeks before the application due date.** It may take 21 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> to guide you through the process. **IMPORTANT:** During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner identification Number" (MPIN). When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e., Grants.gov registration).

3. Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. When the AOR receives email Number 5, it is their responsibility to follow the instructions in the email to logon to IIPS and verify that their application was received by DOE. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five e-mails are:

- Number 1 - Grants.gov Submission Receipt Number
- Number 2 - Grants.gov Submission Validation Receipt for Application Number
- Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number
- Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number

Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:

Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

PART V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the Announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the Funding Opportunity Announcement.

2. Merit Review Criteria

Applications submitted in response to this funding opportunity will be evaluated and scored in accordance with the criteria and weights listed below:

Criterion 1- Scientific and Technical Merit (50%)

- The degree to which the Applicant understands and conveys the nature and significance of the scientific challenges and the problem being addressed in the application.
- The degree to which the proposed work is based on sound scientific and engineering principles, and is designed to overcome limitations or make advances on the current state of technology, knowledge or capabilities.
- The likelihood of developing a new successful technology.
- The relevance of the proposed project to the objectives of this Announcement.
- The significance of the likely impacts and benefits of the proposed work in comparison to current state of knowledge or current commercial and emerging technologies.

Criterion 2- Technical Approach (35%)

- Adequacy and feasibility of the applicant's approach to achieving stated objectives.
- Appropriateness, rationale, and completeness of the proposed Statement of Project Objectives.
- Appropriateness and completeness of the draft Project Management Plan including the identification of technical, organizational and other risks or factors affecting that potential for success, and mitigation strategies for these risks.
- Adequacy of the proposed labor categories and staffing plan.
- Adequacy of the proposed schedule and the degree to which both appropriate technical and schedule critical path milestones are clearly identified and defined in the proposal, and the likelihood that these milestones will be successfully met based on the proposed technical approach.
- Adequacy of proposed travel and technology transfer plan, including any plans for commercialization or utilization of proposed technology.

Criterion 3- Technical and Management Capabilities (15%)

- Clarity, logic, and effectiveness of project organization, including subawardees, to successfully complete the project.
- Corporate experience of the applicant and participating organizations in managing projects of similar nature and complexity, within budget and on schedule.
- Credentials, capabilities, experience, and availability of key personnel.
- The adequacy and availability of facilities and equipment to perform project tasks

Other Selection Factors

The selection official will consider the following program policy factors in the selection process:

These factors, while not indicators of the Application's merit, e.g., technical excellence, cost, applicant's ability, etc., may be essential to the process of selecting the application(s) that, individually or collectively, will best achieve the program objectives. Program policy factors may be used by the Source Selection Official to select projects for award in lieu of projects of greater technical merit when the selection is deemed likely to result in a superior overall research and development portfolio (including both new and previously-existing projects). Specific justifications that may be used include:

- a. It may be desirable to select project(s) of less technical merit than other project(s) if such a selection will optimize the use of available program funds and not be detrimental to the overall objectives of the program.
- b. It may be desirable to select a group of projects that will increase the diversity of the DOE program portfolio relative to technology concepts, performing organizations, and/or project locality.

The above factors will be independently considered by the Selection Official in determining the optimum mix of applications that will be selected for support. These policy factors will provide the Selection Official with the capability of developing, from the competitive funding opportunity, a broad involvement of organizations and organizational ideas, which both enhance the overall research effort and upgrade the program content to meet the goals of the DOE.

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is available under Financial Assistance, Regulations and Guidance at <http://www.management.energy.gov/documents/meritrev.pdf>.

2. Selection

The Selection Official will consider the merit review recommendation, program policy factors, and the amount of funds available.

3. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

DOE anticipates notifying applicants selected for award by the end of July 2008 and making awards by the end of September 2008.

PART VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

A Notice of Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE.; (4) DOE assistance regulations at 10 CFR part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR part 600 (See: <http://ecfr.gpoaccess.gov>), except for grants and cooperative agreements made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at http://management.energy.gov/business_doe/business_forms.htm. The National Policy Assurances To Be Incorporated As Award Terms are located at DOE http://management.energy.gov/business_doe/business_forms.htm.

Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://www.gc.doe.gov/financial_assistance_awards.htm.

Statement of Substantial Involvement

The Recipient is responsible for:

- Performing the activities supported by this award, including providing the required personnel, facilities, equipment, supplies and services;
- Defining approaches and plans, submitting the plans to DOE for review, and incorporating DOE comments;

- Managing and conducting the project activities, including coordinating with a DOE M&O contractor on activities performed under the M&O contract that are related to the project;
- Attending semiannual program review meetings and reporting project status;
- Submitting technical reports and incorporating DOE comments; and
- Presenting the project results at appropriate technical conferences or meetings as directed by the DOE Project Officer (number of required conferences/meetings will not exceed two per year).

The DOE is responsible for:

- Reviewing in a timely manner project plans, including technology transfer plans, and recommending alternate approaches effort if the plans do not address critical programmatic issues;
- Conducting semiannual program review meetings to ensure adequate progress and that the work accomplishes the program and project objectives. Recommending alternate approaches or shifting work emphasis, if needed;
- Promoting and facilitating technology transfer activities, including disseminating program results through presentations and publications; and
- Serving as scientific/technical liaison between awardees and other program or industry staff.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. See the NETL Business Page at <http://www.netl.doe.gov/business/forms/FederalAssistanceReportingChecklistExample.pdf> for the proposed Checklist for this program.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of the Announcement must be submitted through the “Submit Question” feature of the DOE Industry Interactive Procurement System (IIPS) at <http://e-center.doe.gov>. Locate the program Announcement on IIPS and then click on the “Submit Question” button. Enter required information. You will receive an electronic notification that your question has been answered. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE cannot answer these questions.

B. AGENCY CONTACT

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PART VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this Announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an Announcement message is posted by joining the mailing list for this Announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

DOE reserves the right, without qualification, to reject any or all applications received in response to this Announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. This program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, **for a period of up to five years** from the development of the information, of data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data – Programs Covered Under Special Protected Data Statutes (10 CFR 600 Appendix A to Subpart D), would apply to an award made under this Announcement. This provision will identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and will also identify data that will be recognized by the parties as protected data.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this Announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.